Automatically monitoring Air-Conditioner by SMS Text!

Remotely Control Air-Conditioner by SMS Text!

Temperature Monitoring by SMS Text!

GSM SMS IR CONTROLLER

RTU5016

User Manual

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Website: Http://www.GSMalarmsystem.com

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This handbook has been designed as a guide to the installation and operation of RTU5016 GSM SMS IR Controller.
Statements contained in the handbook are general guidelines only and in no way are designed to supersede the instructions contained with other products.
We recommend that the advice of a registered electrician be sought before any Installation work commences.
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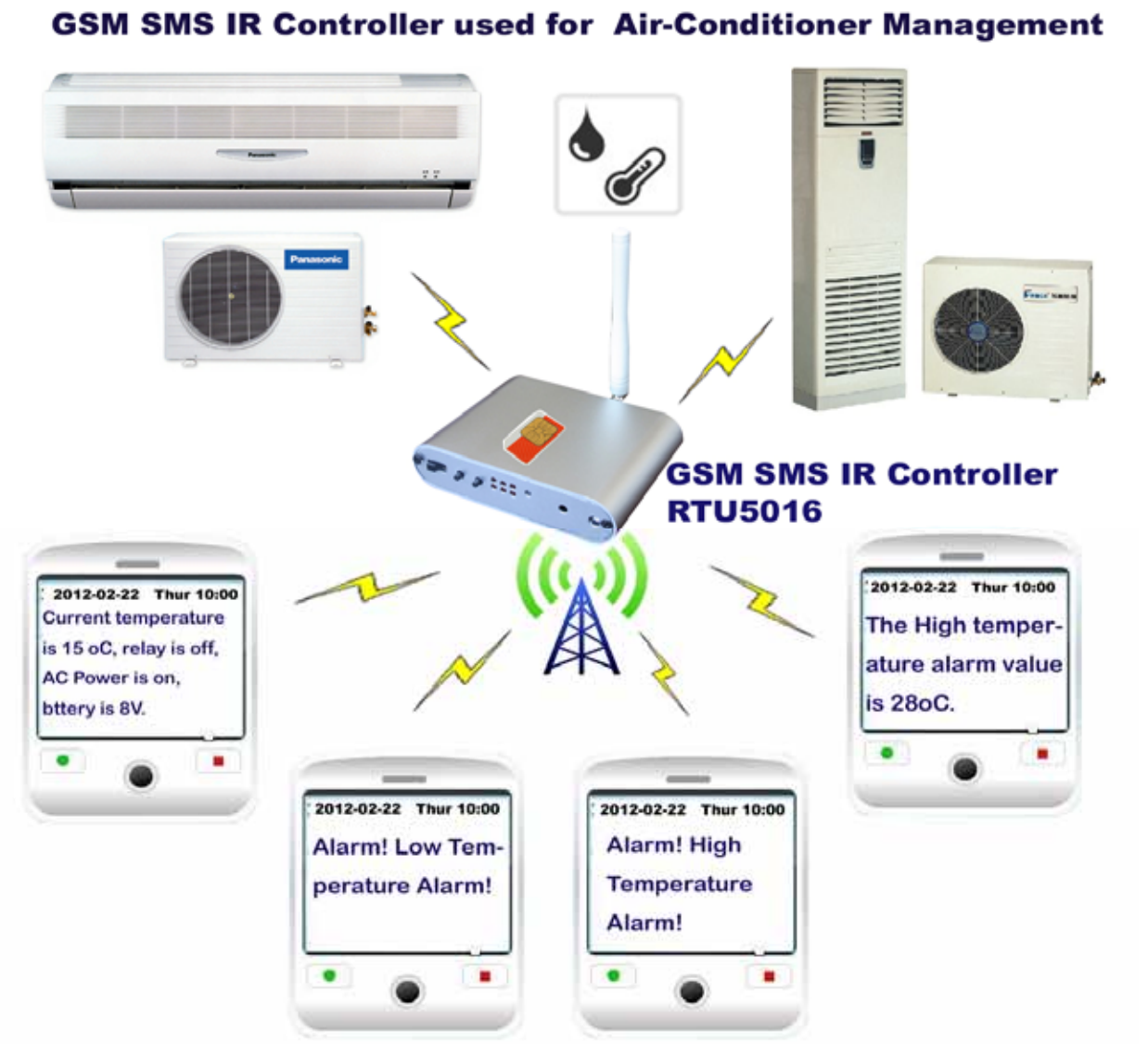
1. Brief introduction

The GSM SMS IR Controller RTU5016 is a very simple device which can be used for authorized temperature monitoring, remote control Air-Conditioner. Actually the GSM SMS IR Controller RTU5016 can be used in places which require to use Infrared Remote to control,e.g.: Air-Conditioner, Temperature Monitoring, Automatically monitoring temperature with Air-Conditioner at preset temperature range.

Moreover, the GSM SMS IR Controller RTU5016 equips with a relay output, can be used in places which require turning ON/OFF your system, machines, equipments remotely with a SMS Text command from your mobile phone.

What Applications does the GSM SMS IR Controller RTU5016 suitable for?


GSM SMS IR Controller used for Air-Conditioner Management
GSM SMS IR Controller
RTU5016
2012-02-22 Thur 10:00
Current temperature is 15 oC, relay is off, AC Power is on, bttery is 8V.
2012-02-22 Thur 10:00
The High temper-ature alarm value is 28oC.
2012-02-22 Thur 10:00
Alarm! Low Tem-perature Alarm!
2012-02-22 Thur 10:00
Alarm! High Temperature Alarm!

1) Temperature Monitoring alarm application, e.g.: Send SMS to inquiry the current temperature;
2) Air-Conditioner Remotely management, e.g.: Switch ON Air-Conditioner and setup the temperature value;
3) Infrared Remote Control equipments, e.g: Switch on/Off the Air-Conditioner;
4) Warehouses and Laboratory room, e.g.: Monitoring the temperature, higher or lower should send SMS warning to owners.
5) Automatically monitoring the temperature within the preset range, e.g.: Higher than 25℃ should automatically switch on Air-Conditioner and send SMS to owners, low than 10℃ should automatically switch on the heater Air-Conditioner to heat up the temperature and warning owners by SMS.
6) Switch ON/OFF equipments, e.g.: motor, Air-Conditioner, and other electronic equipments.

2.Safety Directions

Safe Startup
Do not use GSM SMS IR Controller when using GSM equipment is prohibited or might bring disturbance or danger.

Interference
All wireless equipment might interfere network signals of GSM SMS IR Controller and influence its performance.

Avoid Use at Gas Station
Do not use GSM SMS IR Controller at a gas station. Power off GSM SMS IR Controller when it near fuels or chemicals.

Power it off near Blasting Places
Please follow relevant restrictive regulations. Avoid using the device in blasting places.

Reasonable Use
Please install the product at suitable places as described in the product documentation. Avoid signal shielded by covering the mainframe.

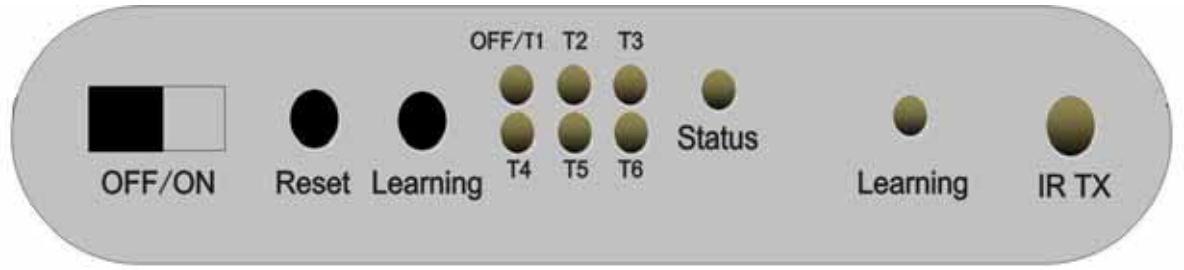
Use Qualified Maintenance Service
Maintenance can be carried out only by qualified maintainer.

3. Standard Packing List

GSM SMS IR Controller X1, GSM ANT X1, Temperature Diode X1 (25°=10K,1% precision), User Manual X1(CD), Connector X1,AC/DC Adaptor X1.

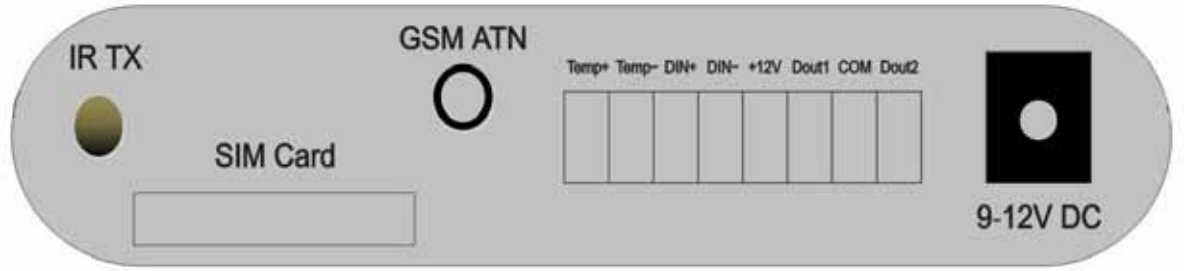
4. Physical Layout

4.1 GSM SMS IR Controller physical layout



Interface Instruction 1

OFF/ON	Switch ON/OFF the unit.
Reset	Press it then switch on the controller, the parameters have been reset to default settings.
Learning	This button for learning IR(Air-Conditioner's Infrared Remote) Transmitter
OFF/T1~6	T1 Position Led, when learning IR signal to T1, will flick, after learned successful, Led will always on.
T2	T1 Led off, T2 Led on then learn to IR signal to T2 Position;
T3~T6	The same as T2, the other Led will off. Press learning button to loop T1 to T6 one by one.
Status	Switch on GSM SMS IR Controller: Off; Registered GSM Network successful: Always Green; Registered GSM Network failure: Off; Enter to Learn IR Signal Mode: Red; Learning IR Signal: Red and Green Receiving and Sending SMS: Green and flick red color.
Learning	IR Receiver, while learning the IR Signal, the IR's IR Transmitter must face this IR Led.
IR TX	IR Transmitter, must face the Air-Conditioner's IR Receiver.



Interface Instruction 2

IR TX	IR Transmitter, must face the Air-Conditioner's IR Receiver. The same as another one.
SIMCard	Put SIMCard inside.
GSM ATN	Install the GSM Antenna
Temp+	Temperature Diode connector, non-Polar.
Temp-	Temperature Diode connector, non-Polar.
DIN+	Reserved, useless.
DIN-	GND.
+12V	Optional Power Socket, Output 12VDC from GSM SMS IR Controller to external device or power on the GSM SMS IR Controller from external power source.
Dout1	Normal Close Output Relay.
COM	Com
Dout2	Normal Open Output Relay.
9-12VDC	Power source.

5. Features

1) 1 temperature diode(25°=10K,1% precision, included in standard package) input to convert the temperature to digital value;
2) Lower or Higher warning temperature threshold value can be configured;
3) Can inquire the current temperature value in ℃ to mobile phone by SMS Command, e.g.:21℃.
4) Can be configured parameters from anywhere by SMS Text command, no distance limit;
5) Automatically Switch ON/OFF Air-Conditioner while temperature exceeding the preset range;
6) Up to 5 different temperature value can be configured by SMS commands;
7) Up to 5 phone numbers can be configured as SMS Text warning receiver;
8) External AC Power failure and recovery can warn the users;
9) 1 Digital Output Relay(3A240VAC, NC and NO) can be used for remotely switch ON/OFF equipments by SMS Text Command, Also the relay can be linked to the temperature threshold value, e.g.: when temperature is lower or higher than the threshold value, then switch ON or OFF the output relay automatically.
10) Secure - Using password for identification authorized users;
11) Based on GSM Network, applied to many applications.

6. Settings(SMS Commands)

Notice:

1) *The default Password is **1234**.*
2) *All the settings are through SMS commands, please edit the below SMS commands in your cell phone, then send to the RTU5016 Unit.*
3) *You can program the GSM SMS IR Controller with SMS commands using your phone. It is safe to do so because in addition to the fact that other people may not know the number of the SIM inserted in it, we also use a Password that makes it impossible for anybody, who doesn't know it, to access the system by chance.*
4) *Remember that commands must be **CAPITAL Lock LETTERS**. It is PWD not pwd, CAP not Cap etc. Don't add spaces or any other character. When input punctuation symbol #, must be under ENGLISH or DIGITAL input method. Not support other input method.*
5) *When external AC goes off and goes on, will send SMS Tex t "AC Power goes off" or "AC Power goes on" to the authorized numbers.*
6) *The SMS commands that you will certainly use in the GSM SMS IR Controller are the following 6.1~6.11.*
7) *All return SMS will additional includes current temperature value, relay status, external power status, backup battery voltage value, Low Temperature alarm value, High Temperature alarm value and link-action details.*
8) *When you want to reset the parameters to factory default, please Press the Reset Button then switch on the controller, after long "Di" sound alert means the parameters have been reset to default settings.*
9) *In some GSM operators they use different SMS protocols; the units can't return the SMS confirmation is normally. It is not product problem. For this problem, mainly caused by incorrect phone number format, please try to add the country code before the number, see the below settings:*

For example:

In UK, the country code is **0044**, or **+44**.

The user cell phone number is **3408888666** and has been assigned as a SMS Alert number, the simcard number in the panel is **3408888555**.

Problem 1: Alarm but the user hasn't received the SMS Alert.

Solution: Please plus the country code while you setup the **3408888666** as SMS Alert number, means setup **00443408888666** to instead of the **3408888666**.

Problem 2: The user number can receive the SMS Alert message from alarm panel, but the alarm panel can not receive the commands from the user number.

Solution: Please add country code to the simcard number in the alarm panel. Means send sms commands to **003408888555** to instead of **3408888555**.

Solution 3: When you use cell phone dial another one, what number it will be displayed then you can set the displayed number as dial numbers; when you use cell phone send SMS to another cell phone, what number it will be displayed then you can set the displayed number as SMS Alert number, just use the 00 to replace the "+", also, you can try the "+".

6.1 Setup New Password

pwd#PWD#newwpassword#

if successful, the unit will return: **Password modified OK**.
For example, the original password is 1234, you want change it to 6666, then you can send the command below: **1234#PWD#6666#**

Tips: 1.The **pwd** in the commands is means the password, when you use it, please in stand of it by the digital number, the capital letters **PWD** is the command letter, use **PWD** directly.
2.Remember that commands must be **CAPITAL Lock LETTERS**. It is PWD not pwd, CAP not Cap etc. Don't add spaces or any other character. When input punctuation symbol #, must be under ENGLISH or DIGITAL input method. Not support other input method.

6.2 Setup Authorized number

pwd#TELAuthorized Number#Serial Number#

E.g.: if you want to setup 13500001111 as the first user number, and the password is 1234,then you can send **1234#TEL004413500001111#01#** to the RTU5016 unit. After the RTU5016 received, the 0044 is country code, will return:

Tel 1: 004413500001111;
Tel 2: Empty;
Tel 3: Empty;
Tel 4: Empty;
Tel 5: Empty.

Tips: 1. the authorized number means the one who can receive the RTU5016 unit warning SMS text.
2.We strongly recommend that these numbers are cellphone numbers, because of the alarm message only send by SMS text;
3. The Serial Number is the position to store the authorized number, from 01~05.

6.3 Remove the Authorized Number

pwd#TEL#Serial Number#

(or you can overwrite with another number you wish to change it).
E.g.: if you want to remove the authorized number at position 05, and the password is 1234, then you can send **1234#TEL#05#**

6.4 Inquiry the Authorized Number

pwd#TEL#

6.5 Inquiry the assigned IR value information

pwd#READ#

After the RTU5016 received, will return:

Temp set 1 is Power Off;	-----stands for the T1 position has been assigned the ON/OFF Value, the T1 is special for assigning the Conditioner's IR ON/OFF Value ;
Temp set 2 is En;	-----stands for the T2 position has been assigned a IR Value;
Temp set 3 is En;	-----stands for the T3 position has been assigned a IR Value;
T4---;	-----stands for the T4 position hasn't been assigned any IR Value;
T5---;	-----stands for the T5 position hasn't been assigned any Value;
Temp set 6 is En;	-----stands for the T6 position has been assigned a IR Value.

Tips: The GSM SMS IR Controller can be saved 5 different temperature value, The T1 position is for assigning IR ON/OFF Air-Conditioner value, the T2~T6 positions are for assigning IR Temperature value,.

6.6 Setup Low Temperature Alarm Value and Actions

1) **Enable low temperature alarm function:** **pwd#LOW#ON#**

Reply: Enable low temperature alarm.

When low temperature alarm occurrence, will send SMS **Alarm! Low Temperature alarm!** to the owners.

2) **Disabled low temperature alarm function:** **pwd#LOW#OFF#**

Reply: Disabled low temperature alarm.

3) **Setup low temperature alarm value:** **pwd#LOWtemperature value#**

Reply: The Low temperature alarm value is xx°C, the relay is ON.

Notice: While setup the low or high temperature value, please don't include the unit °C in the command.

4) **Switch On the Relay Output when low temperature alarm occurrence:** **pwd#LOW#RON#**

Reply: The Relay will ON when low temperature alarm occurrence.

5) **Switch OFF the Relay Output when low temperature alarm occurrence:** **pwd#LOW#ROFF#**

Reply: The Relay will OFF when low temperature alarm occurrence.

6) **Non-Link the Relay Output when low temperature alarm occurrence:** **pwd#LOW#RNO#**

Reply: The Relay is not link to low temperature alarm occurrence.

7) **Switch On the Air-Conditioner automatically when low temperature alarm occurrence:**

pwd#LOW#ATx#

Reply: When low temperature alarm occurrence will change air conditioner to Tx Value.

Tips: in Tx, the x=1~6. Stands for T1~T6. This command means when low temperature alarm, will switch on the Air-Conditioner with Tx temperature. Please pay attention to the T1 is special for OFF Value.

8) **Non-Link the Air-Conditioner when low temperature alarm occurrence:**

pwd#LOW#AOFF#

Reply: The Air-Conditioner is not link to low temperature alarm occurrence.

Tips: The Non-Link Air-Conditioner and Non-Link the relay output when low temperature alarm occurrence is default.

6.7 Setup High Temperature Alarm Value and Actions

1) **Enable high temperature alarm function:** pwd#HIGH#ON#

Reply: Enable High temperature alarm.

When high temperature alarm occurrence, will send SMS **Alarm! High Temperature alarm!** to the owners.

2) **Disabled High temperature alarm function:** pwd#HIGH#OFF#

Reply: Disabled High temperature alarm.

3) **Setup High temperature alarm value:** pwd#HIGHtemperature value#

Reply: The High temperature alarm value is xx°C, the relay is ON.

4) **Switch On the Relay Output when High temperature alarm occurrence:** pwd#HIGH#RON#

Reply: The Relay will ON when High temperature alarm occurrence.

5) **Switch OFF the Relay Output when High temperature alarm occurrence:** pwd#HIGH#ROFF#

Reply: The Relay will OFF when High temperature alarm occurrence.

6) **Non-Link the Relay Output when High temperature alarm occurrence:** pwd#HIGH#RNO#

Reply: The Relay is not link to High temperature alarm occurrence.

7) **Switch On the Air-Conditioner automatically when High temperature alarm occurrence:**

pwd#HIGH#ATx#

Reply: When high temperature alarm occurrence will change air conditioner to Tx Value.

Tips: The Tx is the same means of abovementioned, x=1~6. Please pay attention to the T1 is special for OFF Value.

8) **Non-Link the Air-Conditoner when High temperature alarm occurrence:**

pwd#HIGH#AOFF#

Reply: The Air-Conditiner is not link to High temperature alarm occurrence.

Tips: The Non-Link Air-Conditioner and Non-Link the relay output when high temperature alarm

occurrence is default.

6.8 Switch ON the Relay Output

pwd#CC#

Reply: Relay: On.

Tips: The Relay output cannot work while external AC Power goes off. The SMS Command has priority over the Link configurations, e.g.: when setup **Switch On the Relay Output when High temperature alarm occurrence function, and happened, the relay output will switch on, but when the GSM SMS IR Controller received the SMS command pwd#DD#**, the relay output will switch off immediately.

6.9 Switch OFF the Relay Output

pwd#DD#

Reply: Relay: OFF.

6.10 Switch ON Air-Conditioner and setup its temperature

pwd#Tx#

The Tx stands for T2~T6.(T1 is special for switch off the air-conditioner, please see 6.11)
For example, send **pwd#T2#** to switch on the air-conditioner and setup the temperature as T2 position value, will return Temp set2 is En;
Send **pwd#T3#** to change the air-conditioner temperature to T3 Position Value, will return Temp set3 is En;
If the Tx hasn't been assigned any IR value, after send **pwd#Tx#** to the GSM SMS IR Controller, will return Tx---;, eg.: if the T6 Position hasn't been assigned the IR Value, then after send **pwd#T6#** to the GSM SMS IR Controller, will return T6---;
(The T1~T6 value can be assigned to the GSM SMS IR Controller by used the Air-Conditioners' IR Transmitter.)

6.11 Switch OFF Air-Conditioner

pwd#OFF #

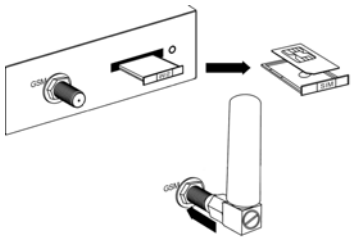
Will return Temp set 1 is PowerOff .

7. Operation & Installation

Before installing the GSM SMS IR Controller, please help to test the system firstly, including power supply, gsm signal, etc.

7.1 *Insert SIMcard into GSM SMS IR Controller*

In one side of the GSM SMS IR Controller, please install the GSM SIM card and GSM Antenna.



7.2 Learning IR Transmitter signal to GSM SMS IR Controller.

Step1: Press the Learning Button and switch on the GSM SMS IR Controller, then loose it and the GSM SMS IR Controller will remove all saved IR Transmitter signals at T1~T6. And enter into learning mode. The T1 Led will flick, and the Status Led will be red and green color.

Step2: Press the Learning Button till the Status Led change to green and T1 Led flicking. Then press the IR(Infrared Remote of the Air-Conditioner) function button(The one what you want to learn to the GSM SMS IR Controller, for T1, it is special for the ON/OFF function. So please press the switch ON/OFF button), when T1 Led change always on and Status LED turns off, then means the learning IR Signal to GSM SMS IR Controller T1 position operation successful.

Step3: Press the Learning Button again, T1 LED will off, T2 Led will flick, press the IR function button, when T2 Led change to Green and Status LED turns off, then means the learning IR Signal to GSM SMS IR Controller T2 position operation successful.

Tips: The Switch Button on IR's panel only used for switch off the Air-Conditioner in the RTU5016.

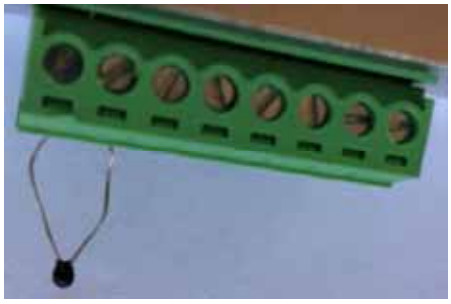
Please learning this button to T1 Position.

The +/- buttons on IR's panel had used for switch on the Air-Conditioner and setup the temperature at T2~T6 positions.

Example: Learning 20℃ to T2 position. You can following below steps.

1) Change the IR Value to 19℃ or 21℃ firstly, then Press the GSM SMS IR Controller learning button, it will flick T1 firstly, press again, it flicks T2, when the T2 Led flicking, and Status Led is Red and green color, then press the +/- on the IR's panel to change the temperature to 20℃ button. after the GSM SMS IR Controller received the signal, will save it at position T2.
2) When you want to learn the Switch OFF button function to the GSM SMS IR Controller, then press the Learning Button, when the T1 Led flicks and status led is red and green color, then press the Switch Button, the GSM SMS IR Controller will receive this signal and save at position T1.
3) So when you send SMS command **pwd#Tx#**, the GSM SMS IR Controller will switch on the Air-Conditioner and change to Tx temperature, if you want to change its temperature, then you can send SMS command **pwd#Tx#** to change it again.

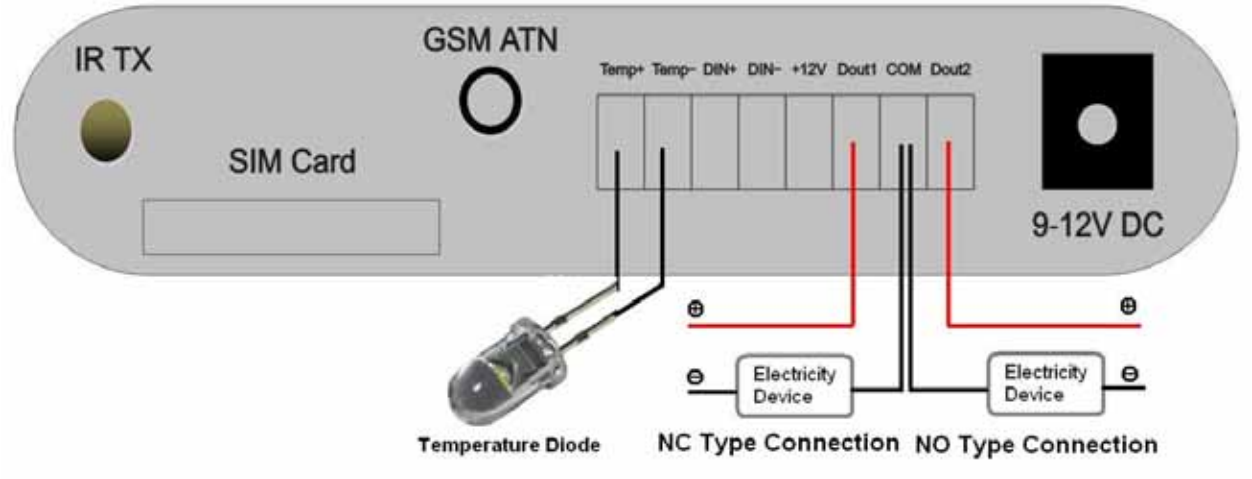
7.3 Connecting the temperature diode(25°=10K,1% precision, included in standard package), the connector points are Temp+ and Temp-, the temperature diode is non-polar.



7.4 Connecting the Electricity equipments

The GSM SMS IR Controller supports 1 Digital Output Relay(3A240VAC, NC and NO), it can be used for remotely switch ON/OFF equipments by SMS Text Command, Also the relay can be linked to the temperature threshold value, e.g.: when temperature is lower or higher than the threshold value, then

switch ON or OFF the output relay automatically. When contact Dout1 and COM, it is Normal Close type. When contact Dout2 and COM, it is Normal Open type, please see below:



7.5 Install the Mainframe

The mainframe should be installed which the IR TX facing the Air-Conditioner IR Reciever to ensure the IR transmission range, and there're with a power source as well as enough GSM signal coverage. The distance from the GSM SMS IR Controller must be less than 3meters to the Air-Conditioner.

8. Technical specifications

Rated Voltage: 9-24VDC 1 A

Working temperature: -10°C～+55°C

Storage temperature: -20°C～+60°C

Relative humidity: 10-90%, No condensation

Work frequency: 900/1800MHz(Default) or 850/1900MHZ.

Communication protocol: GSM PHASE 2/2+ (include data service)

Related Voltage of the Output Relay: 3A/240V AC,Max. 600W

Backup Battery Life: Last 12hours in standby mode.

Power Consumption: Standby≤20MA; Working≤1500MA

IR Transmission: about 2-3m

Size: 85mm*103mm*15mm

Net Weight: 0.50Kg

9. Important information

1) Please read the User Manual carefully before you install the GSM SMS IR Controller and set the GSM SMS IR Controller.

2) Install the system in a hidden place.
3) Avoid getting water into the GSM SMS IR Controller.
4) Have a secure connection to the main power supply.

10. Maintenance

1) In case of failure, please contact the distributor or manufacturer.
2) If the remote control works, but the GSM SMS IR Controller fails to send SMS texts, switch the power of GSM SMS IR Controller off and switch it on after one minute. Test this system after another minute, or check the settings are correct and the GSM Signals are strong enough.
3) If the GSM SMS IR Controller can run and sensors work, but cannot send SMS texts, please change SIM Card to check it.
4) If the problem cannot be solved, please contact the distributor or manufacturer.

11. Warranty

1) This system is warranted to be free of defects in material and workmanship for one year from the date of purchase.
2) This warranty does not extend to any defect, malfunction or failure caused by abuse or misuse by the Operating Instructions. In no event shall the manufacturer be liable for any alarm system altered by purchasers.

The End!

Any questions please help to contact us feel free.

Email Us: Sales@Kingpigeon.com.cn

Http://www.GSMalarmsystem.com

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